

REMARKS

Claim Rejections

Claims 1-6 are rejected under 35 U.S.C. § 112, first and second paragraphs. Claims 1 and 4-6 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Tanaka et al. (U.S. 3,959,049). Claims 2 and 3 are rejected under 35 U.S.C. §103(a) as being unpatentable over Tanaka et al. in view of Cartmill et al. (U.S. 6,228,296).

Amendments to Specification

Applicant has amended the specification as noted above to cure obvious grammatical and idiomatic inaccuracies and to correct the reference number for the inlet. It is believed that the foregoing amendments to the specification overcome the outstanding objections thereto. No "new matter" has been added to the original disclosure by the foregoing amendments to the specification.

Drawings

It is noted that the Examiner has accepted the drawings as originally filed with this application.

New Claims

By this Amendment, Applicant has canceled claims 1-6 and has added new claims 7-12 to this application. It is believed that the new claims specifically set forth each element of Applicant's invention in full compliance with 35 U.S.C. § 112, and define subject matter that is patentably distinguishable over the cited prior art, taken individually or in combination.

It is submitted that the claimed subject matter is described in Applicant's specification detail to enable one having ordinary skill in the art to make and use Applicant's invention without undue experimentation. On page 7 of the specification, the finished synthetic leather is described to include the liquid mixed materials sandwiched between the two basic clothes. However, when a removable paper is

used, it is removed during the winding step. It is believed that Applicant's specification discloses how to make and use the claimed invention.

The new claims recite a manufacturing method for a synthetic leather, which comprises the steps of: measuring and feeding materials utilizing a measuring and conveying device (10) for measuring liquid materials having at least one first tank (11) storing a liquid isocyanate polymer containing NCO and at least one second tank (12) storing a liquid polyol containing OH; foaming utilizing a foaming device (20) for feeding out a foaming agent; mixing and injecting materials utilizing an injecting and mixing device (30) having a mixing and injecting head with a lengthwise center mixing hole (311) and a rotatable threaded rod (312) inserted into the center mixing hole, the injecting and mixing device mixing liquid materials from the measuring and conveying device and the foaming agent from the foaming device that is fed into the lengthwise center mixing hole with the rotatable threaded rod to form liquid mixed materials, and vertically discharging the liquid mixed materials; conveying two cloths (43) utilizing two spaced apart cloth conveying devices (40), the two cloths located below the measuring and conveying device; compressing the liquid mixed materials between the two cloths by positioning a vertical compressing and flowing control device (50) below the injecting and mixing device, conveying the two cloths between to parallel rollers in the vertical compressing and flowing control device, positioning the liquid mixed materials vertically discharged from the injecting and mixing device between the two cloths before the two cloths converge and enter the two parallel rollers, and compressing the liquid mixed materials and the two cloths between the two parallel rollers to form the synthetic leather; and winding the synthetic leather utilizing a winding device (60).

Other embodiments of the present invention include: the measuring and feeding step a) includes utilizing a plurality of definite volume pumps (14), each of the plurality of definite volume pumps connected to one of the plurality of first and second tanks for measuring the liquid materials contained therein; the mixing and injecting step c) includes flowing the liquid materials through a plurality of feeders (32) in the injecting and mixing device before the liquid materials are mixed in the lengthwise center mixing hole, each of the plurality of feeders having an injection hole (321), an inlet (322), a return hole (323), and a control rod (325), wherein the

liquid materials flow into the inlet and out of one of the injecting hole and the return hole; the foaming agent selected from the group of foaming agents consisting of gaseous nitrogen, gas, water, and physical foaming chemicals; the conveying step d) uses two cloths selected from the group of cloths consisting of cloth, removable paper, and plastic skin; the compressing step e) forms the synthetic leather with a predetermine thickness by adjusting a distance between the parallel rollers in the vertical compressing and flowing control device.

The primary reference to Tanaka et al. discloses a process for production of artificial leathers including forming a liquid mixture (1), coating a release paper with a liquid mixture, applying a water vapor-permeable substrate to form a sandwich, moving the sandwich through a controlled environment, and removing the release sheet from the sandwich.

Tanaka et al. do not teach measuring and feeding materials utilizing a measuring and conveying device for measuring liquid materials having at least one first tank storing a liquid isocyanate polymer containing NCO and at least one second tank storing a liquid polyol containing OH; foaming utilizing a foaming device for feeding out a foaming agent; mixing and injecting materials utilizing an injecting and mixing device having a mixing and injecting head with a lengthwise center mixing hole and a rotatable threaded rod inserted into the center mixing hole, the injecting and mixing device mixing liquid materials from the measuring and conveying device and the foaming agent from the foaming device that is fed into the lengthwise center mixing hole with the rotatable threaded rod to form liquid mixed materials, and vertically discharging the liquid mixed materials; compressing the liquid mixed materials between the two cloths by positioning a vertical compressing and flowing control device below the injecting and mixing device, conveying the two cloths between to parallel rollers in the vertical compressing and flowing control device, positioning the liquid mixed materials vertically discharged from the injecting and mixing device between the two cloths before the two cloths converge and enter the two parallel rollers, and compressing the liquid mixed materials and the two cloths between the two parallel rollers to form the synthetic leather; the measuring and feeding step a) includes utilizing a plurality of definite volume pumps, each of the plurality of definite volume pumps connected to one of the plurality of first and

second tanks for measuring the liquid materials contained therein; nor do Tanaka et al. teach the mixing and injecting step c) includes flowing the liquid materials through a plurality of feeders in the injecting and mixing device before the liquid materials are mixed in the lengthwise center mixing hole, each of the plurality of feeders having an injection hole, an inlet, a return hole, and a control rod, wherein the liquid materials flow into the inlet and out of one of the injecting hole and the return hole.

The secondary reference to Cartmill et al. discloses a rolled rigid form including using a mixing head (30) to combine material from a plurality of tanks (11, 12, 13), depositing a foamable material utilizing the mixing head (30) onto a lower sheet (32) and a reinforcing web (49), applying an upper sheet (32'), inserting the combined material through rollers (34, 48), to form a faced foam plastic (51).

Cartmill et al. do not teach measuring and feeding materials utilizing a measuring and conveying device for measuring liquid materials having at least one first tank storing a liquid isocyanate polymer containing NCO and at least one second tank storing a liquid polyol containing OH; mixing and injecting materials utilizing an injecting and mixing device having a mixing and injecting head with a lengthwise center mixing hole and a rotatable threaded rod inserted into the center mixing hole, the injecting and mixing device mixing liquid materials from the measuring and conveying device and the foaming agent from the foaming device that is fed into the lengthwise center mixing hole with the rotatable threaded rod to form liquid mixed materials, and vertically discharging the liquid mixed materials; compressing the liquid mixed materials between the two cloths by positioning a vertical compressing and flowing control device below the injecting and mixing device, conveying the two cloths between to parallel rollers in the vertical compressing and flowing control device, positioning the liquid mixed materials vertically discharged from the injecting and mixing device between the two cloths before the two cloths converge and enter the two parallel rollers, and compressing the liquid mixed materials and the two cloths between the two parallel rollers to form the synthetic leather; nor do Cartmill et al. teach the mixing and injecting step c) includes flowing the liquid materials through a plurality of feeders in the injecting and mixing device before the liquid materials are mixed in the lengthwise center mixing

hole, each of the plurality of feeders having an injection hole, an inlet, a return hole, and a control rod, wherein the liquid materials flow into the inlet and out of one of the injecting hole and the return hole.

Even if the teachings of Tanaka et al. and Cartmill et al. were combined, as suggested by the Examiner, the resultant combination does not suggest: 1) measuring and feeding materials utilizing a measuring and conveying device for measuring liquid materials having at least one first tank storing a liquid isocyanate polymer containing NCO and at least one second tank storing a liquid polyol containing OH; 2) mixing and injecting materials utilizing an injecting and mixing device having a mixing and injecting head with a lengthwise center mixing hole and a rotatable threaded rod inserted into the center mixing hole, the injecting and mixing device mixing liquid materials from the measuring and conveying device and the foaming agent from the foaming device that is fed into the lengthwise center mixing hole with the rotatable threaded rod to form liquid mixed materials, and vertically discharging the liquid mixed materials; 3) compressing the liquid mixed materials between the two cloths by positioning a vertical compressing and flowing control device below the injecting and mixing device, conveying the two cloths between two parallel rollers in the vertical compressing and flowing control device, positioning the liquid mixed materials vertically discharged from the injecting and mixing device between the two cloths before the two cloths converge and enter the two parallel rollers, and compressing the liquid mixed materials and the two cloths between the two parallel rollers to form the synthetic leather; nor does the combination suggest 4) the mixing and injecting step c) includes flowing the liquid materials through a plurality of feeders in the injecting and mixing device before the liquid materials are mixed in the lengthwise center mixing hole, each of the plurality of feeders having an injection hole, an inlet, a return hole, and a control rod, wherein the liquid materials flow into the inlet and out of one of the injecting hole and the return hole.

It is a basic principle of U.S. patent law that it is improper to arbitrarily pick and choose prior art patents and combine selected portions of the selected patents on the basis of Applicant's disclosure to create a hypothetical combination which allegedly renders a claim obvious, unless there is some direction in the selected prior art patents to combine the selected teachings in a manner so as to negate the

patentability of the claimed subject matter. This principle was enunciated over 40 years ago by the Court of Customs and Patent Appeals in In re Rothermel and Waddell, 125 USPQ 328 (CCPA 1960) wherein the court stated, at page 331:

The examiner and the board in rejecting the appealed claims did so by what appears to us to be a piecemeal reconstruction of the prior art patents in the light of appellants' disclosure. ... It is easy now to attribute to this prior art the knowledge which was first made available by appellants and then to assume that it would have been obvious to one having the ordinary skill in the art to make these suggested reconstructions. While such a reconstruction of the art may be an alluring way to rationalize a rejection of the claims, it is not the type of rejection which the statute authorizes.

The same conclusion was later reached by the Court of Appeals for the Federal Circuit in Orthopedic Equipment Company Inc. v. United States, 217 USPQ 193 (Fed.Cir. 1983). In that decision, the court stated, at page 199:

As has been previously explained, the available art shows each of the elements of the claims in suit. Armed with this information, would it then be non-obvious to this person of ordinary skill in the art to coordinate these elements in the same manner as the claims in suit? The difficulty which attaches to all honest attempts to answer this question can be attributed to the strong temptation to rely on hindsight while undertaking this evaluation. It is wrong to use the patent in suit as a guide through the maze of prior art references, combining the right references in the right way so as to achieve the result of the claims in suit. Monday morning quarterbacking is quite improper when resolving the question of non-obviousness in a court of law.

In In re Geiger, 2 USPQ2d, 1276 (Fed.Cir. 1987) the court stated, at page 1278:

We agree with appellant that the PTO has failed to establish a *prima facie* case of obviousness. Obviousness cannot be established by combining the

teachings of the prior art to produce the claimed invention, absent some teaching suggestion or incentive supporting the combination.

Applicant submits that there is not the slightest suggestion in either Tanaka et al. or Cartmill et al. that their respective teachings may be combined as suggested by the Examiner. Case law is clear that, absent any such teaching or suggestion in the prior art, such a combination cannot be made under 35 U.S.C. § 103.

Neither Tanaka et al. nor Cartmill et al. disclose, or suggest a modification of their specifically disclosed structures that would lead one having ordinary skill in the art to arrive at Applicant's claimed structure. Applicant hereby respectfully submits that no combination of the cited prior art renders obvious Applicant's new claims.

Summary

In view of the foregoing amendments and remarks, Applicant submits that this application is now in condition for allowance and such action is respectfully requested. Should any points remain in issue, which the Examiner feels could best be resolved by either a personal or a telephone interview, it is urged that Applicant's local attorney be contacted at the exchange listed below.

Respectfully submitted,

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